

IN THE CLAIMS

Please cancel claims 1 through 53 without prejudice or disclaimer of their subject matter, add claims 54 through 70, as follows:

Claims 1 through 53. (Canceled)

- 1 54. (New) A gas system for testing aircrew systems including a first system and a second
2 system, said gas system characterized by:
3 a first compressor compressing air, said first compressor characterized by at least one blower,
4 a speed of said blower depending on a voltage applied to said blower;
5 a second compressor compressing the air, said second compressor producing a lower flow
6 at a higher pressure than said first compressor;
7 a first flow sensor detecting a flow of the air compressed by said first compressor and
8 leakage by of the aircrew systems;
9 a second flow sensor detecting the flow of the air compressed by said first compressor and
10 the leaking of the aircrew systems;
11 a first flow valve mounted to control the flow of the air compressed by said first compressor
12 to said first flow sensor;
13 a second flow valve mounted for controlling the flow of the air compressed by said first
14 compressor and provided to said second flow sensor;
15 a regulator regulating a pressure of said second system;

16 a first pressure sensor detecting a pressure of said first system;
17 a second pressure sensor detecting the pressure of said second system;
18 a first pressure valve control the pressure of said first system;
19 a second pressure valve for controlling the pressure of said second system; and
20 a controller regulating operation of said gas system.

1 55. (New) The gas system of claim 54, said first compressor characterized by three
2 regenerative blowers connected in series, said three regenerative blowers characterized by a first
3 blower, a second blower, and a third blower.

1 56. (New) The gas system of claim 54, said first compressor compressing the air until
2 a G-suit pressure reaches a predetermined first pressure, said second compressor starting to compress
3 the air when said G-suit pressure reaches said predetermined first pressure and finishing when said
4 G-suit pressure reaches a predetermined second pressure.

1 57. (New) The gas system of claim 54, further comprised of:
2 said first flow sensor being able to measure the flow from 0 to 10,000 cubic centimeters per
3 minute; and
4 said second flow sensor being able to measure the flow 0 to 300 cubic centimeters per
5 minute.

1 58. (New) The gas system of claim 54, with said controller characterized by a speed
2 control printed circuit board controlling a voltage applied to said first compressor.

1 59. (New) An apparatus for testing aircrew systems, said apparatus characterized by:
2 a first unit configured to test a mask;
3 a second unit configured to test a g-suit;
4 a third unit configured to test a communication systems; and
5 a common gas system integrated into said first unit, said second unit, and said third unit, said
6 common gas system characterized by a first compressor and a second compressor producing a lower
7 flow and a higher pressure than said first compressor, said first compressor compressing air when
8 a pressure of an item to be tested is below a preset pressure value, and said second compressor
9 compressing the air when the pressure of the item to be tested is equal to or over the preset pressure
10 value.

1 60. (New) The apparatus of claim 59, further characterized by a fourth unit configured
2 to test a goggle.

1 61. (New) The apparatus of claim 59, further comprised of:
2 said gas system characterized by;
3 said first compressor characterized by at least one blower, a speed of said blower depending
4 on a voltage applied to said blower;

5 a second compressor compressing the air;

6 a first flow sensor detecting a flow of compressed air and a leaking of the aircrew systems;

7 a second flow sensor detecting the flow of the compressed air and the leaking of the aircrew

8 systems;

9 a first flow valve controlling the flow of the compressed air to said first flow sensor;

10 a second flow valve controlling the flow of the compressed air to said second flow sensor;

11 a regulator regulating a pressure of the G-suit;

12 a first pressure sensor detecting a pressure of the mask;

13 a second pressure sensor detecting the pressure of the G-suit;

14 a first pressure valve controlling the pressure of the mask;

15 a second pressure valve controlling the pressure of the G-suit; and

16 a controller regulating operation of said gas system.

1 62. (New) The apparatus of claim 59, said first compressor characterized by three
2 regenerative blowers connected in series, said three regenerative blowers characterized by a first
3 blower, a second blower, and a third blower.

1 63. (New) The apparatus of claim 59, said first compressor compressing the air for
2 testing the mask, said first compressor compressing the air for the G-suit until pressure in the G-suit
3 reaches 55 inch H₂O, said second compressor starting to compress the air for the G-suit when said
4 pressure is about 55 inch H₂O and finishing when said pressure in the G-suit is about 70 inch H₂O.

1 64. (New) The apparatus of claim 59, further characterized by:

2 a first limit valve limiting a pressure of said first system.

1 65. (New) The apparatus of claim 59, further characterized by a speed control unit

2 controlling said first compressor by controlling a voltage applied to said first compressor.

1 66. (New) An apparatus for testing aircrew systems, said apparatus characterized by:

2 a first unit for testing a mask;

3 a second unit for testing a G-suit;

4 wherein said first unit and said second unit have a common gas system, said gas system

5 characterized by:

6 a first system connected to an inlet, said first system characterized by:

7 a first compressor characterized by a plurality of blowers connected in series to compress said
8 air from said inlet, a flow sensor to detect a flow of said air, a first pressure sensor to detect a
9 pressure of said mask;

10 a first port accommodating air flowing to said mask;

11 a second system connected to said inlet, said second system characterized by said second

12 compressor producing a lower flow and a higher pressure than said first compressor, said first
13 compressor compressing air when a pressure of the G-suit is below a preset pressure value, and said
14 second compressor compressing the air when the pressure of the G-suit is equal to or over the preset

15 pressure value, a second pressure sensor to detect the pressure of said G-suit, and a second port
16 through which the air flows to said G-suit.

1 67. (New) The apparatus of claim 66, further characterized by a third unit for testing
2 communication systems, wherein said first unit, said second unit, and third unit are integrated.

1 68. (New) An apparatus, characterized by:
2 a first unit accommodating a first removable test coupling to an appliance;
3 a second unit accommodating a second removable test coupling to a pressurizable garment;
4 a gas system common to operation of said first unit and said second unit, said gas system
5 having an intake port disposed to receive ambient air, said gas system characterized by:
6 a first pressure sensor positioned to indicate pressure of the air at the first test coupling;
7 a second pressure sensor positioned to indicate pressure of the air at the second test coupling;
8 a first compressor connected in series to said intake port to supply the air to said first test
9 coupling and, when said second pressure sensor indicates that the pressure at the second test coupling
10 is below a preset value, to supply the air to said second test coupling;
11 a flow sensor positioned to indicate a flow of the air emanating from said first compressor;
12 and
13 a second compressor connected to said intake port to supply the air to said second test
14 coupling when said second pressure sensor indicates that the pressure at the second test coupling is
15 equal to or greater than the preset value.

1 69. (New) An apparatus, constructed by steps characterized by:

2 fitting a first unit accommodating a first removable test coupling to an appliance;

3 fitting a second unit accommodating a second removable test coupling to a pressurizable

4 garment; and

5 incorporating a gas system in common to operation of said first unit and said second unit,

6 said gas system having an intake port disposed to receive ambient air, said gas system characterized

7 by:

8 a first pressure sensor positioned to indicate pressure of the air at the first test coupling;

9 a second pressure sensor positioned to indicate pressure of the air at the second test coupling;

10 a first compressor connected in series to said intake port to supply the air to said first test

11 coupling and, when said second pressure sensor indicates that the pressure at the second test coupling

12 is below a preset value, to supply the air to said second test coupling;

13 a flow sensor positioned to indicate a flow of the air emanating from said first compressor;

14 and

15 a second compressor connected to said intake port to supply the air to said second test

16 coupling when said second pressure sensor indicates that the pressure at the second test coupling is

17 equal to or greater than the preset value.

1 70. (New) A process of making an apparatus for testing an appliance and a pressurizable

2 garment, characterized by the steps of:

fitting a first unit accommodating a first removable test coupling to an appliance;

fitting a second unit accommodating a second removable test coupling to a pressurizable

garment; and

incorporating a gas system in common to operation of said first unit and said second unit,

said gas system comprising an intake port disposed to receive ambient air, said gas system

characterized by:

a first pressure sensor positioned to indicate pressure of the air at the first test coupling;

a second pressure sensor positioned to indicate pressure of the air at the second test coupling;

a first compressor connected in series to said intake port to supply the air to said first test

coupling and, when said second pressure sensor indicates that the pressure at the second test coupling

is below a preset value, to supply the air to said second test coupling;

a flow sensor positioned to indicate a flow of the air emanating from said first compressor;

and

a second compressor connected to said intake port to supply the air to said second test

coupling when said second pressure sensor indicates that the pressure at the second test coupling is

equal to or greater than the preset value.

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